Research and Development Classification Process (RDCP) Overview

Kelli F. Willshire

December 2003

Presentation Outline

- Why we have the RDCP
- What the RDCP is
- Mechanics of the RDCP
- Results
- Assessment

Introduction

- President's Management Agenda calls for strategic management of Human Capital
- Research and Development skills are necessary to maintain Center's core competencies' ability to serve the public
- Aerospace Technologist (AST) 700 Group created by NASA to facilitate recruitment of scientists and engineers
  - RDCP ASTs are all in the 700 Group
  - Recognition of stature and appropriate pay for work are two retention methods
  - The two OPM Guides used for classification of AST, rank-in-person, positions recognize stature as critical
    - » Stature and contributions double weighted in one factor

Peer Review

- OPM Evaluation Guides recommend use of peer reviews for Rank-in-Person positions
  - Person's unique experience, contributions, and stature major part of the classification scoring
  - Other Agencies and universities have used such peer review processes for several years
    - » Peers, rather than managers or OHR classification specialists alone, better understand the relevance of the contributions and stature in the field.
    - » Managers still involved: advice, job duties, package preparation, interviews, early and deferred reviews
- Our RDCP modeled after processes used by other Agencies
  - Uses peer panels to apply criteria specified by OPM classification standards for these positions
  - Delegated authority to do so by the Office of Human Resources and the Center Director.
  - Addresses problems raised in GSFC class action suit

Research & Development Classification Process (RDCP) Characteristics

- A system designed to ensure that all employees in rank-in-person positions have accurately described and properly classified position descriptions
  - Used for R&T ASTs, GS 13 through GS 15
  - GS 11s and GS 12s use a modified process (Branch head and one reviewer rather than a panel)
- Clear and understandable to employees and managers, consistent across the Competencies, a published process, with published grade level criteria.
  - Addresses R&T employees' concern about understanding their promotion process and its equity (ref. 2000 Center Survey, items 82 & 87)
  - Published process in the LMS
- Satisfies requirements in NPG 3510.5B, "Position Classification"
  - Requires periodic position reviews for everyone, evaluation reports, and appeals

Evaluation Guides

Two OPM classification standards recognize rank-in-person for research and development positions

- Research Grade Evaluation Guide (RGEG) and Equipment Development Grade Evaluation Guide (EDGEG), Part 1, 2, or 3
- Each Guide has differently named position description factors across 2 or 4 factors but the information is basically the same across the factors
- RGEG (and EDGEG Part 3) - Used for 75% of RDCP positions
  - Four Factors
    - » Research situation or assignment
    - » Supervision received (span of control, authority, & influence)
    - » Originality
    - » **Qualifications and Contributions - double weighted**

Determining Grade Level with the Guides

1. Factors of Position Description scored by assigning highest degree level fully met according to criteria in the appropriate Guide
2. Each Degree Level has corresponding points defined in the Guides
3. Total points scored determines overall Grade Level

Position Description

Factor I

Factor 2

Factor 3

Factor 4

VS.

RGEG
Factor I Criteria
Degree A,C, E, E+

Factor 2 Criteria
Degree A,C, E, E+

Factor 3 Criteria
Degree A,C, E, E+

Factor 4 Criteria
Degree A,C, E, E+

Degree / Factor	A	B	C	D	E
I	2	4	6	8	10
II	2	4	6	8	10
III	2	4	6	8	10
IV	**4**	**8**	**12**	**16**	**20**
Total	10	20	30	40	50

Grade	Total Points
GS-11	**8-12**
GS-12	**16-22**
GS-13	**26-32**
GS-14	**36-42**
GS-15	**46-52**

RDCP Characteristics, contd.

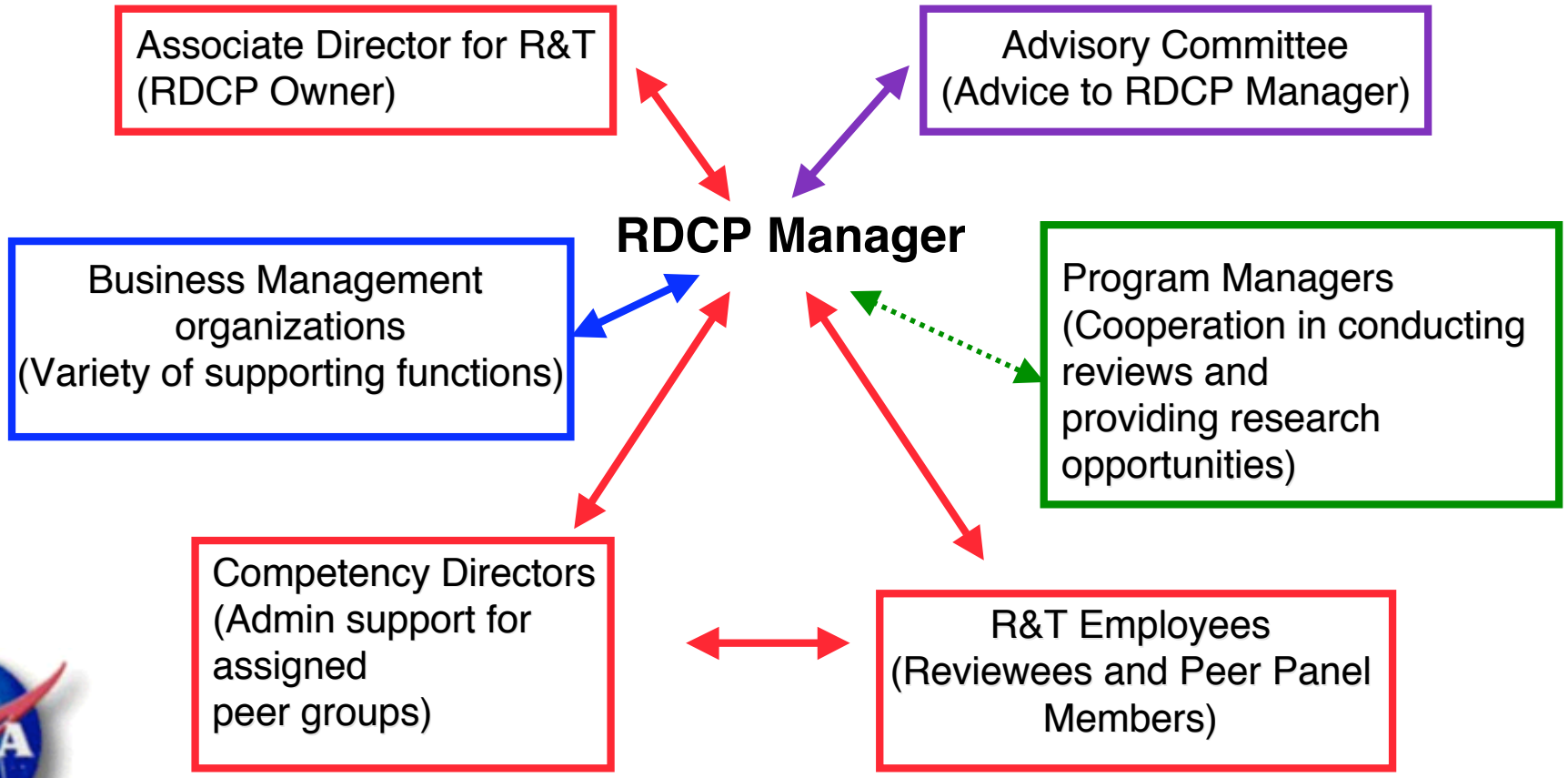
- Instituted in July 2001
  - Twelve Peer Groups identified
  - RDCP Employees matched to a Peer Group
  - RDCP Employees randomly assigned to one of nine initial review sessions
    - » Plus one to three wild card slots if money available
  - RDCP Employees serve as panel members for the Peer Groups and conduct the reviews each session
- Reviews result in evaluations of recommended grade level appropriate for each position
  - All recommendations go forward to OHR for action
  - Process can result in promotions, but at a minimum get updated position descriptions.
- Each person to be reviewed about every four years, minimum.
- Provides case for as many GS-13's,14's and15's in these positions as we have budget available.
  - Can't take away someone's stature. Person's contributions establish the grade level, not a quota!

RDCP Manager

- Technical (research or development) background/experience
  - Current manager, Dr. Kelli Willshire, has experience as researcher in both aero and space, program manager in aero and space, and has branch head experience.
  - Has peer perspective and acceptance
- Full time position in the Office of the Director reporting to ADR&T
- Responsible for quality and integrity of peer review process
  - Includes training for all participants and process assessment
  - Participates in all panel meetings for all reviewees
- Ensure consistency across Center
- Coordinate process with OHR
- Consults Advisory Committee for guidance
  - Competency, OHR, CCO, and EEO representatives
  - Regular meetings

Who's Involved in RDCP?

RDCP is a process for research professionals run by a research professional with support from others



Business Management Roles in RDCP

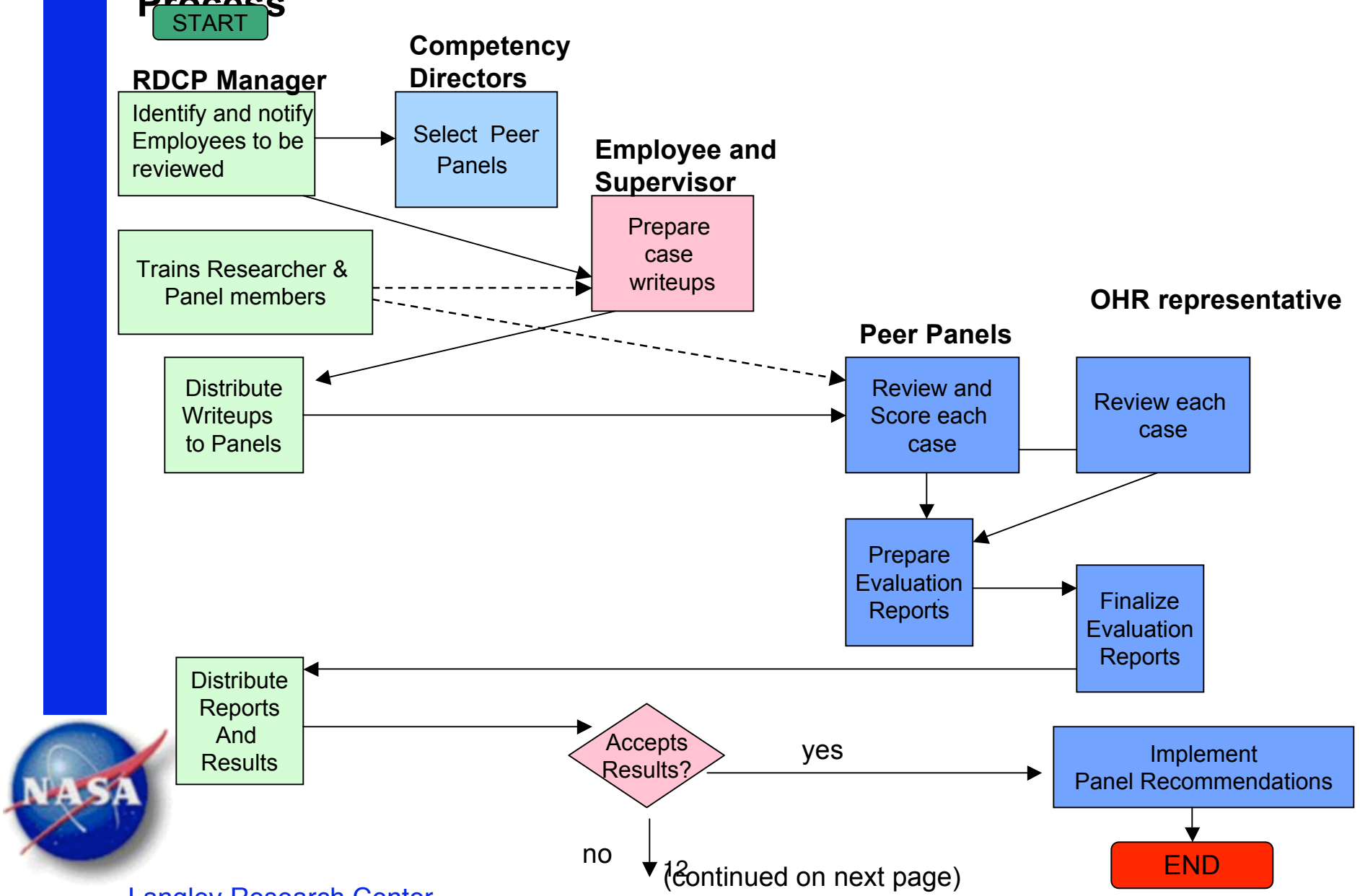
- Budget support - Most critical
  - Plan for RDCP promotions, low and high grade early in year
  - Number reviewed based on yearly allocation
    - » We try not to review more people than we have budget, based on overall 50% promotion rate so far
  - At least three RDCP sessions per year
- Office of Human Resources support in all phases
  - Guide interpretation
  - Final classifications
  - Re-evaluations and / or desk audits
  - Advisory Committee membership
- Procurement support
  - Off-site panel meeting room rent, etc

Business Management Roles in RDCP, contd.

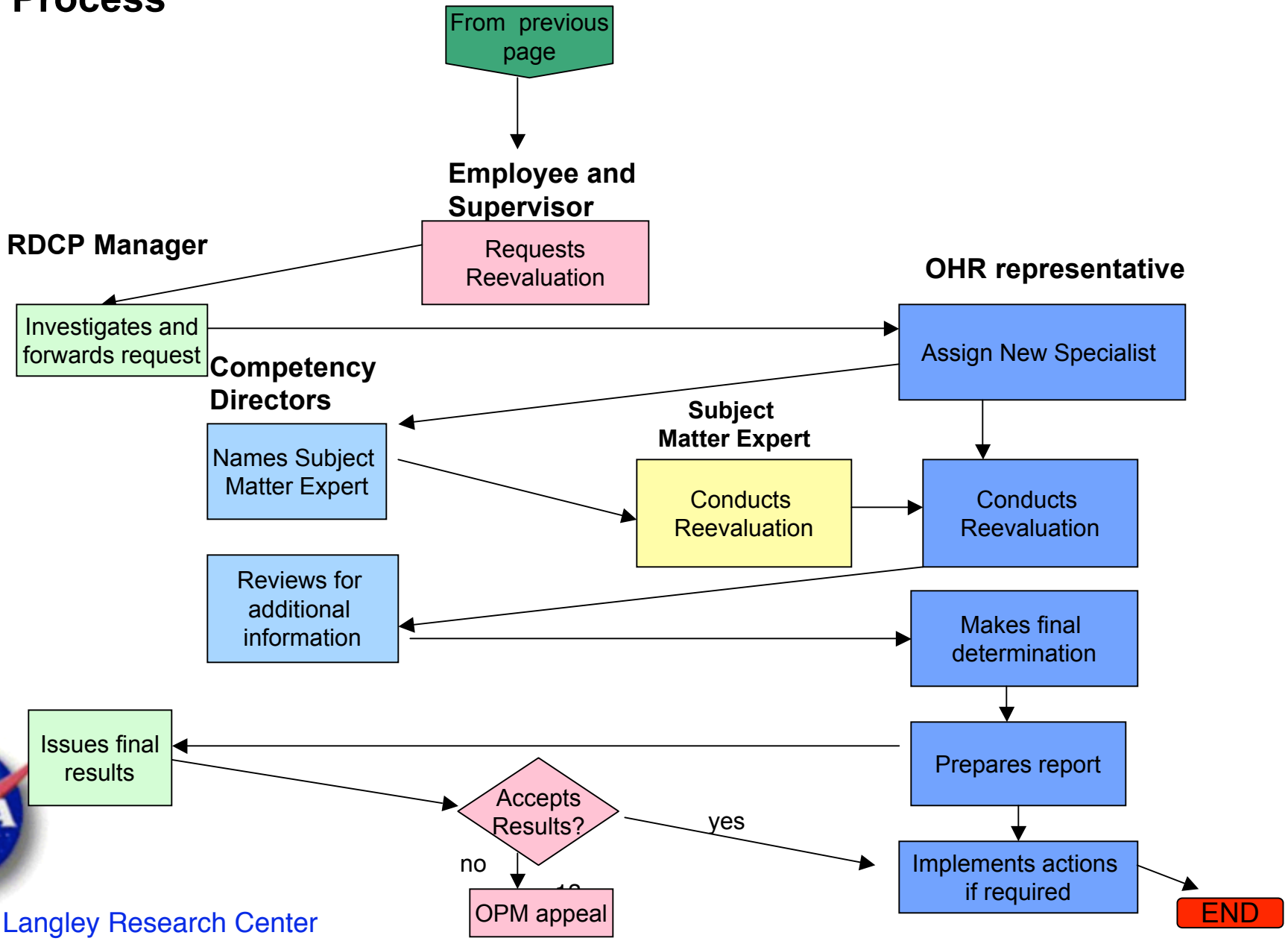
- Chief Counsel's Office
  - Advice
  - Advisory Committee membership
- EEO
  - Advisory Committee membership
- Chief Information Officer
  - Websites support
    - » Provides information to employees
    - » Transfers information
  - Database support
    - » Used to maintain records and results

Research and Development Classification Process

(See CP 0019 for details)



Research and Development Classification Process



Minimum RDCP Session Timeline

Day	1	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
Activity																									
Reviewees notified																									
Package preparation																									
Panel member selection																									
Reviewee training																									
Panel training																									
Panel kickoff																									
Packages due																									
Panel preparation																									
Panel meetings																									
Reports released																									
Actions processed																									

Session 7 Schedule*

- Employees notified for review August 15, 2003
- Packages due OHR and RDCP manager October 8, 2003
- Panels prepare October 9 - November 5, 2003
- Panels meet November 5 - December 17, 2003
- Reports released by December 19, 2003
- Estimated effective promotion date December 28, 2003
- Latest date for re-evaluation request January 20, 2004

* *FY04 Continuing Resolution, that is budget availability, may stretch schedule out.*

Future Sessions Schedule*

- Session 8
  - Employees notified for review January 5, 2004
  - Packages due OHR and RDCP manager February 19, 2004
  - Panels prepare February 23- March 19, 2004
  - Panels meet March 22- April 3, 2004
  - Reports released by May 7, 2004
  - Estimated effective promotion date May, 2004
  - Latest date for re-evaluation request June 7, 2004
- Session 9
  - Employees notified for review May 10, 2004
  - Packages due OHR and RDCP manager June 24, 2004
  - Panels prepare June 28 -July 30, 2004
  - Panels meet August 1- September 17, 2004
  - Reports released by September 27, 2004
  - Estimated effective promotion date October 2004
  - Latest date for re-evaluation request October 28, 2004

* *Subject to change.*

Twelve Peer Groups: Total approximately 750 ASTs, GS-13s, 14s, and 15s

Aerodynamics and Acoustics (AAAC) {RGEG and EDGEG part 3}

Aerospace Systems Analysis (ASCAC) {RGEG and EDGEG part 3}

Aerothermodynamics and Hypersonic Air-breathing Propulsion (AAAC) {RGEG and EDGEG part 3}

Atmospheric/Space Science (AtSC) {RGEG and EDGEG part 3}

Computational Methods (ASCAC) {RGEG and EDGEG part 3}

Computer Science/Engineering (SEC) {EDGEG part 1 and part 2 and EDGEG part 3}

Crew Systems, Aviation Ops, Mission Critical (ASC) {RGEG and EDGEG part 3}

Dynamics and Control (ASC) {RGEG and EDGEG part 3}

Flight Instrumentation Research (SEC) {RGEG and EDGEG part 3}

Research Systems (SEC) {EDGEG part 1 and part 2 and EDGEG part 3}

Sensors, Instrumentation, and Measurement (SMC) {RGEG and EDGEG part 3}

Structural Mechanics and Advanced Materials (SMC) {RGEG and EDGEG part 3}

Lead Competency Directors identified in parentheses

Guide(s) used identified in brackets

Peer Groups being reviewed in Session 7 in blue type

How Reviewee Session Assignment is Made

- Assigned to a peer group, as determined by Competency Director and Branch Head.
- Initially, all R&T employees determined to be possibly covered by RDCP were randomly assigned to one of nine sessions for each peer group maintaining population distribution of grade levels.
- That initial session assignment is the **latest** session someone has opportunity to be reviewed.
- Ways to be reviewed earlier than originally assigned session
  - Management wild card slots. Up to 30% of each session slots allowed for wild cards, if budget allows.
    - » "Early reviews" require use of wild card slots
  - Bumped up if vacancy occurs in current session, if budget allows
    - » Name moved up if someone delays review in current assigned session.
- Employees entering RDCP after original session assignments go into Session 10 and subsequent sessions.

Delayed Reviews

- There are some acceptable reasons for a specific individual's review to be delayed
  - File Intent-to-Retire within two years of originally assigned session
  - Excessive workload for critical milestone
  - Performance problem
  - Recent change of assignment
  - Prolonged absence from worksite - e.g., illness, details
- All delays must be approved by Competency Director

Training

- Multiple briefings given each session to
  - Reviewees
  - Panel Members
  - Branch Heads - invited to all training sessions
- Video tapes and materials provided to those who must miss the training
  - Materials also posted on RDCP Information website
- Mock panel evaluation session video
  - Available to all participants to become acquainted with panel operations and some example considerations

RDCP Reviewee Packages

- Reviewee and Branch Head prepare package
- Four parts:
  - Case Write-up Cover Sheet (LF 517)
    - » Signed by Reviewee and Branch Head certifying accuracy and completeness
  - Position Description based on RGEG or EDGEG
    - » Two or Four Factors
  - Employee Accomplishment Record (whole career)
    - » Substantiates the position description
  - Contact/Reference List
    - » Used to provide clarification and confirmation of package information
    - » Includes external references, if applicable to the position, of which at least one is contacted

Panel Operation

- Panel Chairs are named by the Lead Competency Director with concurrence by other involved Competency Directors.
- Panel Chairs and the Competency Director name 4 -6 panel members with Branch Head approval. Names are not officially released. Panel Chair assigns In-Depth Reviewer (IDR) for each reviewee.
- IDR conducts in-depth reviews to clarify information in the package.
- All panel members evaluate each reviewee prior to the meeting. OHR rep and RDCP Manager also review each writeup but don't score it.
- At panel meeting, each reviewee discussed one at a time.
  - Initial scores presented by all panel members
  - IDR presents report
  - Discussion to agree on consensus for each Factor
  - Final report written by entire panel
  - RDCP manager and OHR rep make sure discussion is appropriate and process is followed.
- All panel discussions are **confidential**
  - Member notes and files collected and destroyed

Panel Decisions

- Panels classify reviewee positions at appropriate grade - actually determine a grade level
  - Results fall into these categories:
    - » Above Current Grade
    - » At Current Grade
    - » Below Current Grade
    - » Borderline Grade
  - Panels can also recommend **Early Review** if significant progress likely after 12 months.
    - » Branch Head must get approval from Competency Director for an early review. Not automatic. Requires use of wild card.
  - Panels can also recommend **ST Pool Referral** if get appropriate score
    - » Highly qualified GS-15 candidates to be considered for possible referral for future vacancies
    - » Must meet certain score criteria

Example partial panel evaluation report

RGEG Position Evaluation Report

Researcher: Ted D. Baer

Peer Group: **Aerodynamics and Acoustics**

Summary Scores

Factor I – Research Assignment	Factor II – Supervision Received	Factor III – Guidelines and Originality	Factor IV – Qualifications and Contributions
D	D	D	D

Total Score: 40 **Grade Conversion:** GS-14

Factor I – Research Assignment

The panel assigned Degree D for this factor because:

- The incumbent conducts pioneering research in shape memory alloys (SMA), a complex field with issues in many different discipline areas in which significant advances must be made for applications to be successful.
- Through individual research and the formation of cross-competency teams, the incumbent has laid the groundwork for advancements in many different aspects of the understanding and application of SMAs for the foreseeable future.
- The incumbent's research has built LaRC's SMA expertise from the ground up and is currently being expanded to include other engineers.
- The incumbent's research has a number of important applications in a wide range of fields and has the potential to have a revolutionary impact in future aircraft. The potential applications of the research area are only beginning to be explored.
- The incumbent leads a model development team and provides technical leadership for a number of other teams that were formed by him based on identified research needs.

The incumbent exceeds the requirements of Degree C as evidenced by the above. The scope of this research area is not broad enough to assign Degree E.

Factor II – Supervision Received

The panel assigned Degree D for this factor because:

- The incumbent receives minimal technical supervision from his supervisor and has complete responsibility for formulating a research plan, enlisting and negotiating support of other organizations and directing the research plan.
- The incumbent is solely responsible for the technical direction of several research teams.
- The incumbent has full authority to represent SAB and LaRC in the incumbent's areas of expertise both within and outside NASA. He is expected to disseminate research plans and findings directly to outside technical organizations.

The latter two meet criteria that exceed Degree C.

Results to Date

- Originally, 795 reviewees were assigned to nine sessions
- For various reasons, total number for the first nine sessions is now 712
- 488 reviews conducted through session 7(July 2001-December 2003)
  - Includes some repeat reviews and desk audits
  - Average 52% promotion rate overall including GS 15s reviewed and "intent to retires" not actually reviewed
  - Through session 7, 30 people have indicated intent to retire
  - 51 GS-15s reviewed and stayed at grade
    - » 22 put into ST Referral Pool
- 269 above-grade decisions
  - 54% promotion rate for those actually reviewed, including GS-15s
  - High promotion rate due to catch-up for very limited promotions for a number of years. Expect this rate through session 10.
    - » 189 GS-13s to GS-14s out of 298 reviewees (63% promotion rate)
    - » 80 GS-14s to GS-15s out of 136 reviewees (59% promotion rate)

Results to Date, continued

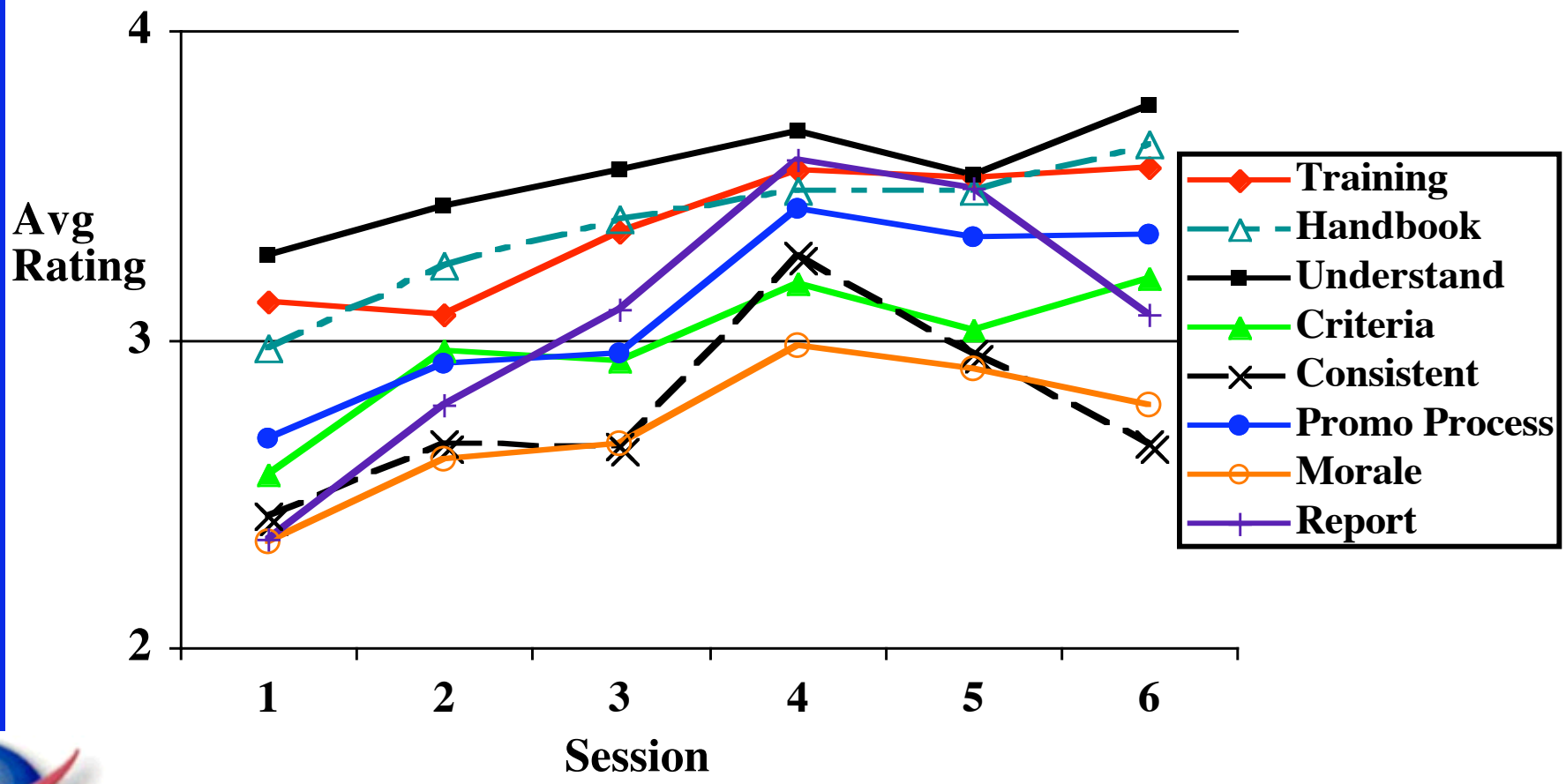
- 42 requests for re-evaluations through session 6
  - 11 changed to above-grade decisions through session 5
  - 2 changed to above-grade from session 6 so far

- 282 total RDCP promotions to date out of a total of 530 reviews
  - Includes re-evaluations
  - 53% total promotion rate
- Promotion rate very consistent across sessions.

Assessment and Feedback

- Assessment is performed continuously by the RDCP Manager
- Results of assessment are used to suggest improvements to the process, many of which have already been implemented.
- Center Surveys
  - Center-wide organizational/cultural surveys were conducted in 2000 and 2002. The greatest increase in a rating was directly attributable to RDCP: People have a greater understanding of their promotion process.
- Session Surveys
  - Brief web-based surveys are conducted at the end of each session for all participants: Branch Heads, Reviewees, and Panel Members
  - Survey deals with such items as time spent, understanding the process, training, consistency, and morale.
  - Results are analyzed and posted on the RDCP website.
  - In general, ratings have increased over the sessions.

Significant Survey Response Differences for Sessions



Assessment and Feedback, contd.

- Status Report to SQMC
  - Results of first four sessions analyzed in depth.
  - Detailed results reported in a document, posted on the RDCP website.
- For first four sessions (July 2001 through September 2002)
  - 283 out of 743 people reviewed (40% of original pool done)
  - 56 branch heads
  - 216 panel members
  - Average time was 42 hours for branch heads, 62 hours for reviewees, 56 hours for panel members
  - Overall average promotion rate was 55%
  - In general, no statistical differences were found for results between Competencies, peer groups, gender, or race, and match population distribution.
- Next Status Report by April, 2004

RDCP Information and Contacts

- RDCP Manager -
  - Dr. Kelli Willshire, 864-1965, k.f.willshire@larc.nasa.gov
- OHR-RDCP Information Website
  - http://ohr.larc.nasa.gov/RDCP.html
- More information about RDCP also in LMS CP-0019 and the RDCP Guidance document found at http://lms-p.larc.nasa.gov/
- Time & Attendance FCS is 23-090-20-06

Summary

- Research and Development Classification Process created to help retain critical science and engineering skills
- Based on LaRC peer consensus grade level determination using standard OPM Guides for rank-in-person positions
- Been in use for two years
  - Approximately 70% of initial reviews completed over seven sessions
  - Average 52% overall promotion rate
  - Refinements being made during initial sessions
- After initial reviews completed, all employees will get periodic re-reviews, approximately every 4 years
- Estimated number of promotions included in annual budget plans
- Assessment results indicate RDCP is understandable by employees and is an improvement over old promotion system

Back up charts

Brief Description of Classification Guides and Employee Package

Research Grade Evaluation Guide

- Covers positions of performing professionally responsible research or leadership of and participation in research team
- Fits these criteria
  - characterized by systematic investigation of aerospace engineering and atmospheric phenomena using experimental,simulations, or theoretical, and/or computational techniques.
  - characterized by application of scientific methods including problem exploration and definition, planning of the approach and sequence of steps, execution of experiments or studies, interpretation of findings, and documentation or reporting of findings.
- Products typically associated with this kind of work include
  - Development of theories, principles, concepts, techniques, approaches, and processes
  - Results in papers, presentations, patents, inventions, etc
- Covers majority (75%) of those in RDCP

EDGEG Position Descriptions

- Covers
  - positions engaged in planning, formulating, defining, monitoring, managing and evaluating governmental and contractor work for new or improved systems or equipment
- Equipment Development Guide contains three parts
  - Part I – Product Development
  - Part II – Project Management
  - Part III – Experimental Development
- Formats in each section are different
- Use the Part that covers the greatest majority of work performed in the position

EDGEG Part I – Product Development

- Product Development –
  - Covers the work required during the planning, conceptual and definition phases of the development process
  - Also covers providing technical direction to contractors, evaluating contractor work, guiding in-house development work, and serving as consultant or advisor on research and development programs
    - » Includes studies and analysis in depth on selected areas
    - » Systems integration of others work
- Format
  - Factor I – Assignment characteristics
  - Factor II – Level of Responsibility

EDGEG Part II – Project Management Engineering

- Covered positions report to a Project Manager
  - Managing development of equipment or systems for such projects for a Project Manager
  - Covers those who manage the combined efforts of contractors and Government agencies in support of development of equipment for a project
  - Includes duties such as preparing cost estimates, preparing schedules, participating in design reviews, and reviewing and assessing work efforts of contractors.
- Qualifications
  - Professional competence in engineering field
  - Understands
    - » Engineering and scientific principles and theories
    - » Methods, practices, and techniques of development design
    - » Criteria and characteristics underlying use and purpose of engineered items
- Format - Four Factors
  - 1. Scope of the Assignment, 2. Technical Complexity of the Assignment, 3. Responsibility and Authority, 4.Technical and Managerial Demands

Equipment Development Grade Evaluation Guide, Part 3

- Covers those who perform experimental and investigative activities to develop new and improved equipment or systems and to advance technology
- Fits these criteria
  - Thorough grounding in theories, principles and practices of physical and engineering sciences
  - Ability to use scientific techniques and methods to analyze, measure, and evaluate the phenomena, materials, equipment, and processes
- Products typically associated with this kind of work include
  - Papers describing application of theories, principles, etc.
  - Design concepts, criteria, and data
  - Laboratory and fabrication techniques and processes
  - Laboratory and prototype models, simulations, etc.
  - Patents and inventions
- Very similar to RGEG, but scoring different

Employee Accomplishment Record

- Details supporting the Factors 1,2, 3, and especially 4
- Total qualifications, professional standing and recognition, and contributions as impact current job
- If publications not appropriate, use other means to judge
- Recency of accomplishments important to show maintenance of competence
- Evidence that incumbent is keeping up with advancing and changing disciplines
- Educational degrees may be important, but not necessarily enough

Employee Accomplishment Record

1. Name
2. Education
3. Relevant Professional Training Received
4. Professional Experience:*
   a. Present assignment
      Dates
      Brief description of duties and titles of projects
      Name of supervisor
   b. Previous professional positions (within last 10 or so years)
      Dates
      List research, engineering, other technical positions
      Provide brief description of work for each positions

** Note: Can combine information in items 4,5, and 6.*

Employee Accomplishment Record

5. Significant Scientific/Engineering/Technical Accomplishments:
   a. Do not duplicate information in item 4
   b. Describe each accomplishment, including results, in a separate paragraph
      - (1) state the accomplishment
      - (2) significance
      - (3) how it was communicated to users
      - (4) the extent to which being applied

Link to contacts on In-depth Review Contact Sheet

Employee Accomplishment Record

6. Scientific/Engineering/Technical Leadership:
    a. Employee's contribution in leading, planning, coordinating
    b. Document effectiveness before and after employee's leadership
7. Professional Scientific/Engineering/Technical Service:
    a. Current membership in professional societies
    b. Rendering scientific judgment
    c. Special assignments or other outreach activities
8. Inventions, Patents Held:
    a. Identify inventions disclosed/patents held
    b. Provide dates
9. Honors, Awards, Recognition, Elected Memberships
    a. List honors, awards and recognition received
    b. Provide date and name of organization for each

Employee Accomplishment Record

10. Work Product List: [Number consecutively]

a. Traditional Publications

Formal refereed publications (journal articles, NASA TPs)

Referenceable oral presentations

Others - NASA TM & CR and briefings not covered in b.

b. System Study Reports

(Reference program or HQ customer, title, contributors, date)

c. Hardware Products

Concept/Technology Development

Trade Studies

Designs

Component/Subsystem/Instrument Development

Integration, Test and Delivery

Employee Accomplishment Record

10. Work Product List continued

d. Software Products

Concept/Technology Development

Trade Studies

Designs

Code Implementation/Development

Integration, Test and Delivery

e. External agreements

Positive Technology Transfer

Memoranda of Understanding and Memoranda of Agreement

Contacts

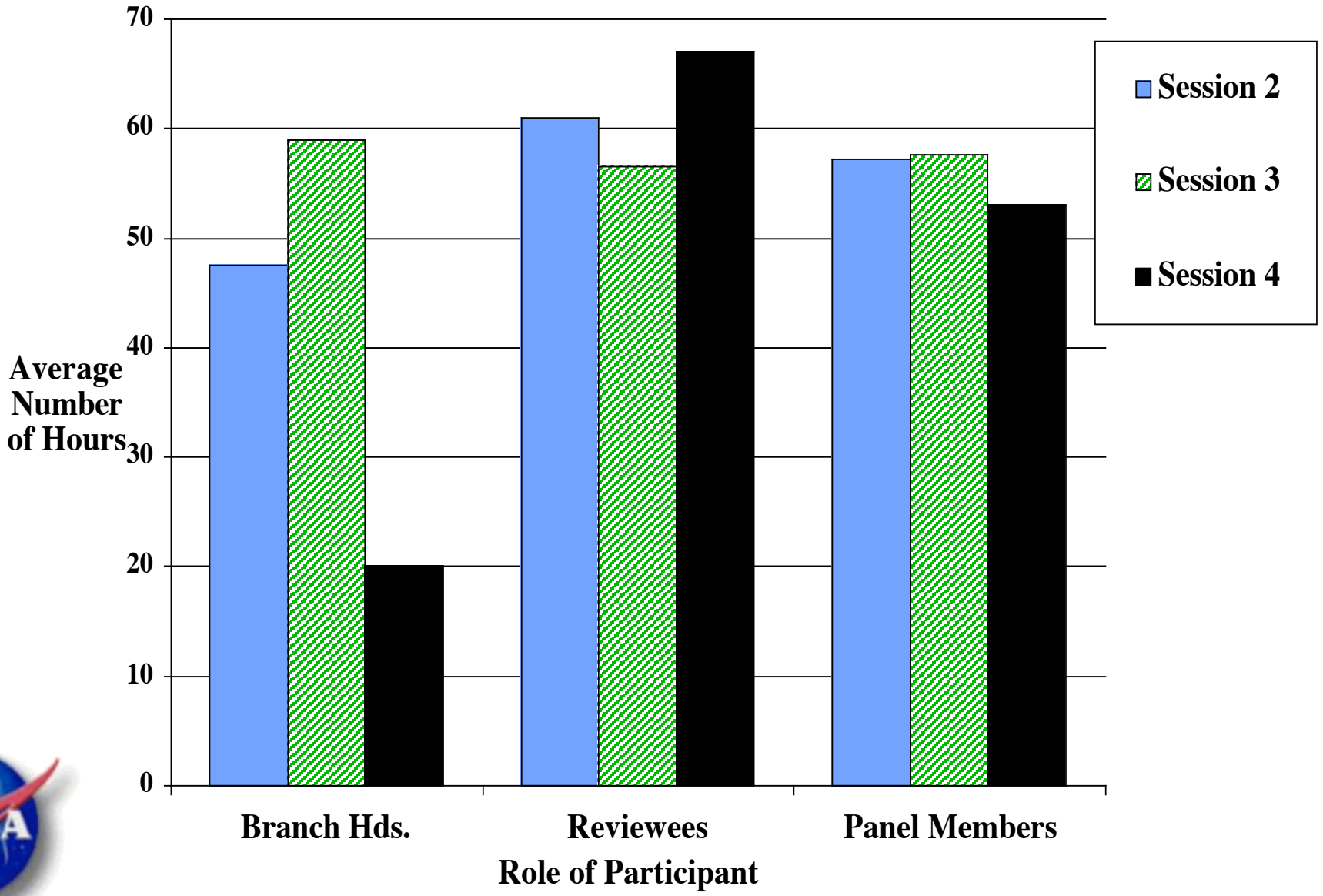
- Individuals who can provide information regarding impact and accomplishments of employee's work
- May be inside Langley or outside - other NASA organizations, universities, corporations
  - At least one contact outside LaRC
  - Outside good for higher grades
- Minimum of 6, maximum of 10 names
- Contact first to ensure he/she is willing to provide reference
- Title, organization, e-mail address, phone number listed on contact sheet

Minimum Session Timeline (120 days)

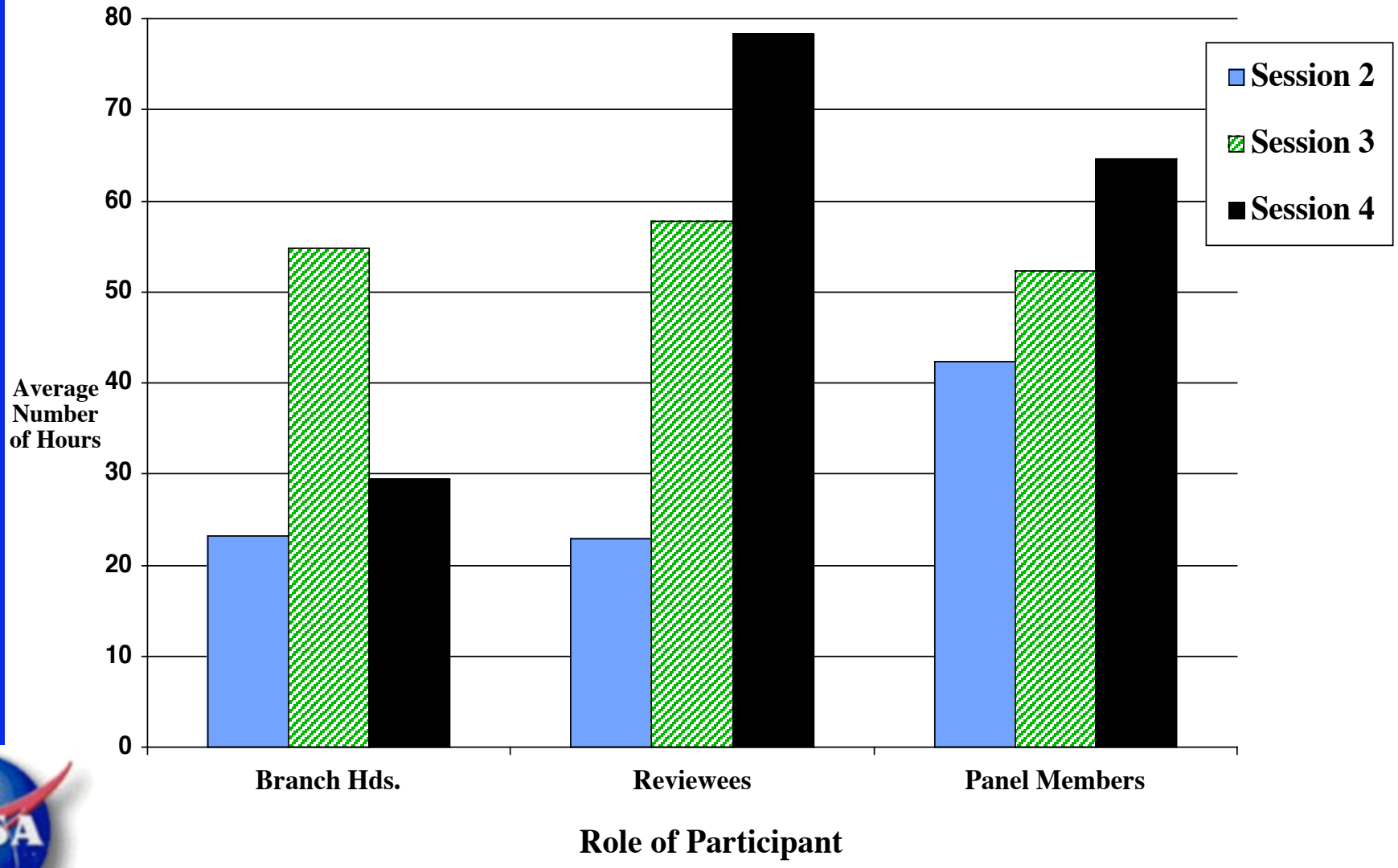
- Notice to employees - Initial notification goes out 45 days before packages are due in OHR. - Day 1
  - Final list complete at least 30 days before packages are due.
- Panel member selection complete by 30 days before packages are due - Day 15.
- Training for reviewees and Branch Heads conducted no later than three weeks before packages are due -Day 14 through 24
- Training for panels conducted no later than two weeks before panels receive packages - Day 24 through 37
- Panel kickoff meetings conducted within two weeks before panels receive packages - Day 37 through 51
- Packages due in OHR at 4:00 pm on 45th day after notice - Day 45
- Packages reviewed and turned over to panels by Day 52
- Panel member/IDR/OHR prep time - Day 53 through 83
- Panel meetings - Day 84 through 105
- Panel reports delivered - Day 119
- Actions processed first day of first pay period thereafter - Day 120

Charts from Status Report (Sessions 1 through 4)

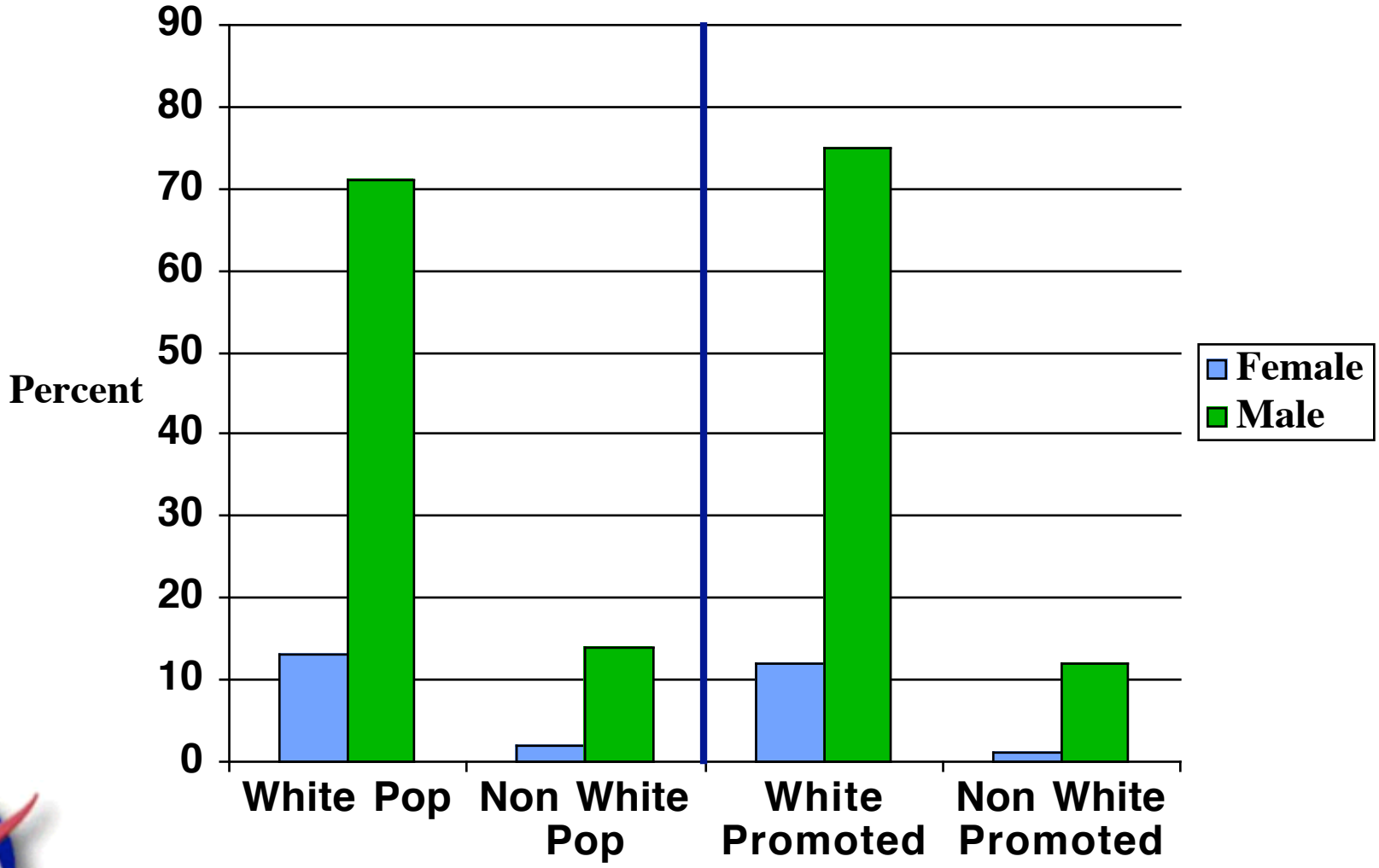
Reported Time Spent via Survey on RDCP Sessions 2, 3, and 4 by Role



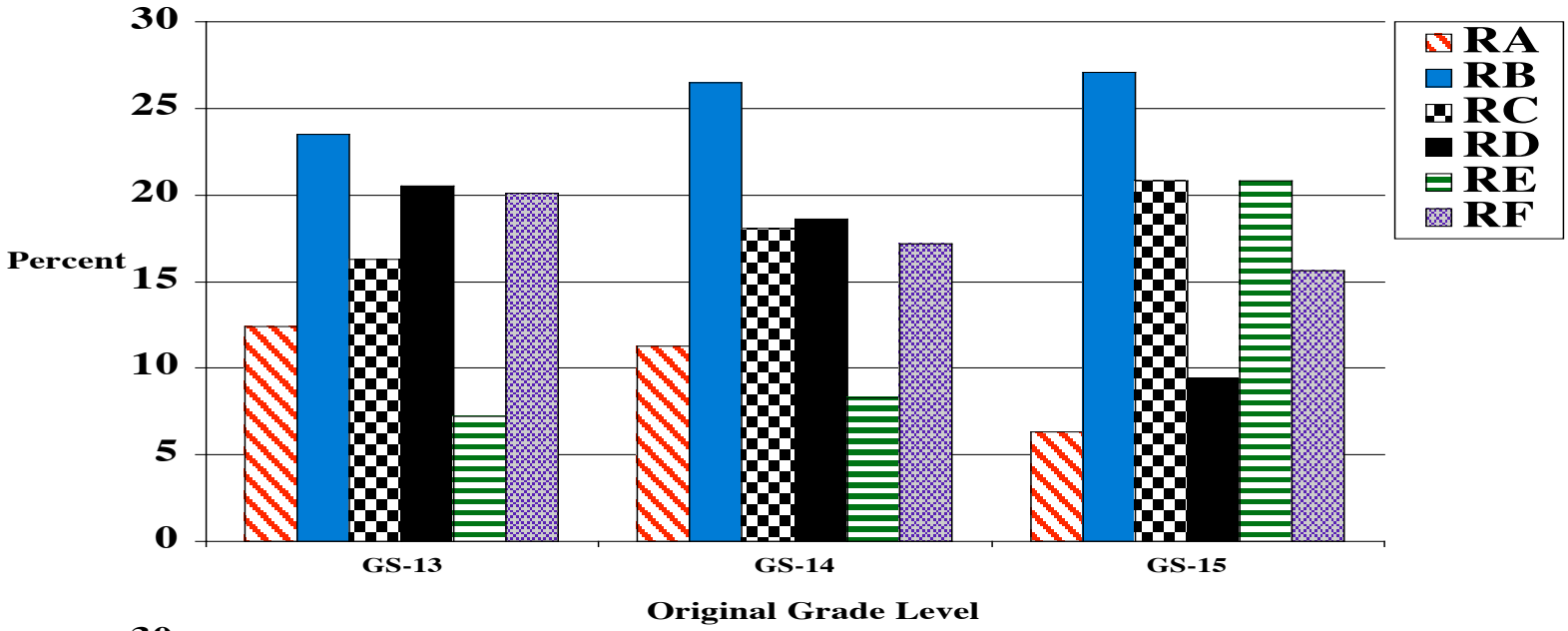
RDCP JO Time Charges by Role and Session 2, 3, and 4

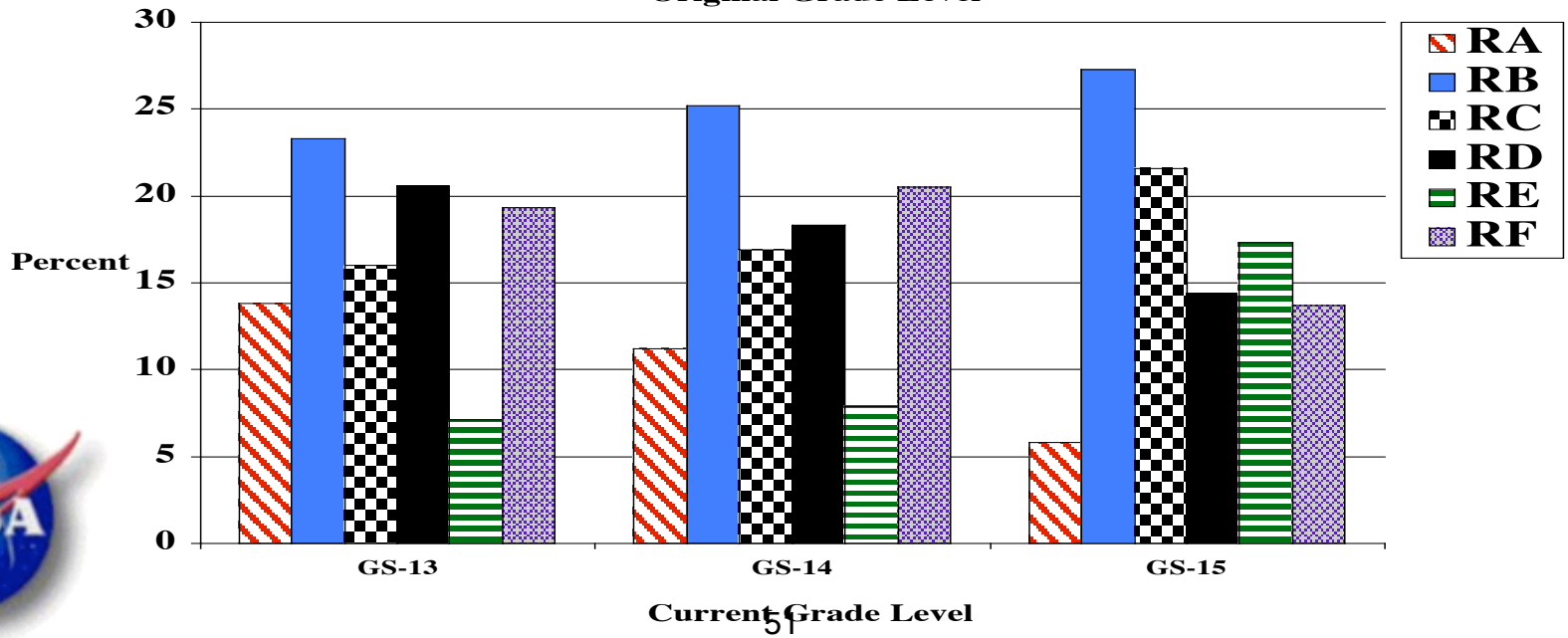


Distribution of RDCP Population by Race and Gender versus those Promoted



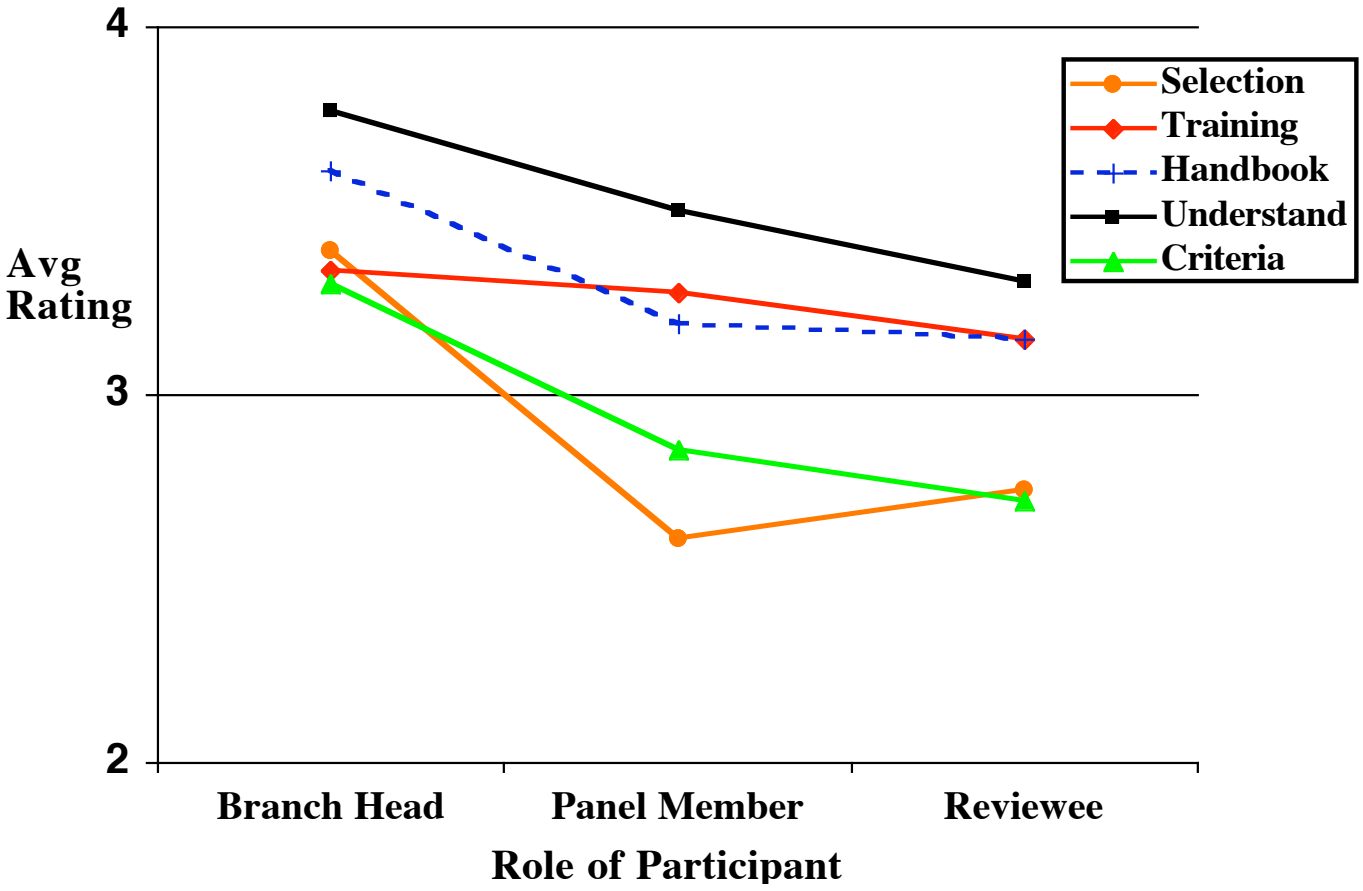
Comparison of RDCP population Within Original and Current Grade Levels by Competency



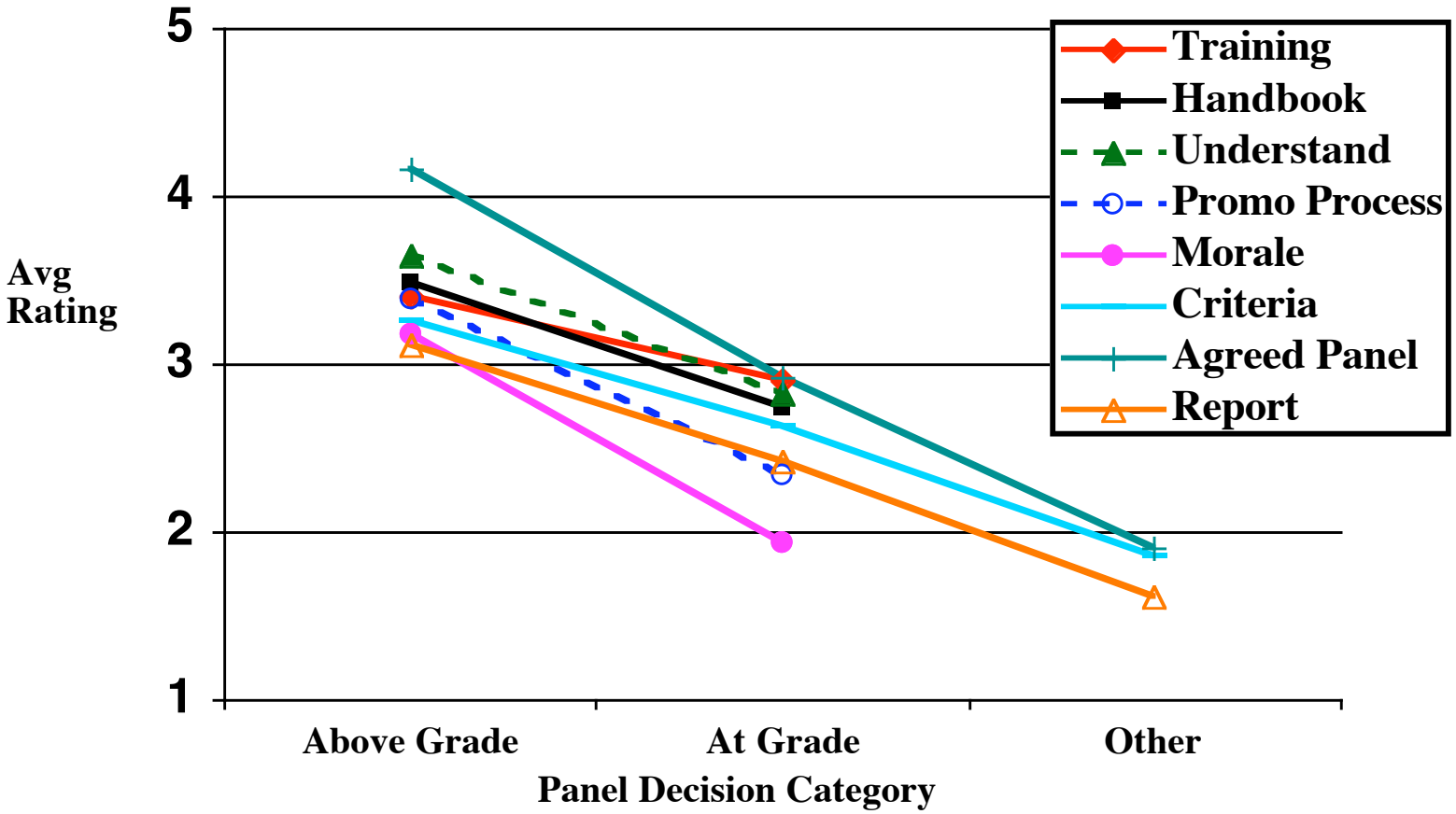


Langley Research Center

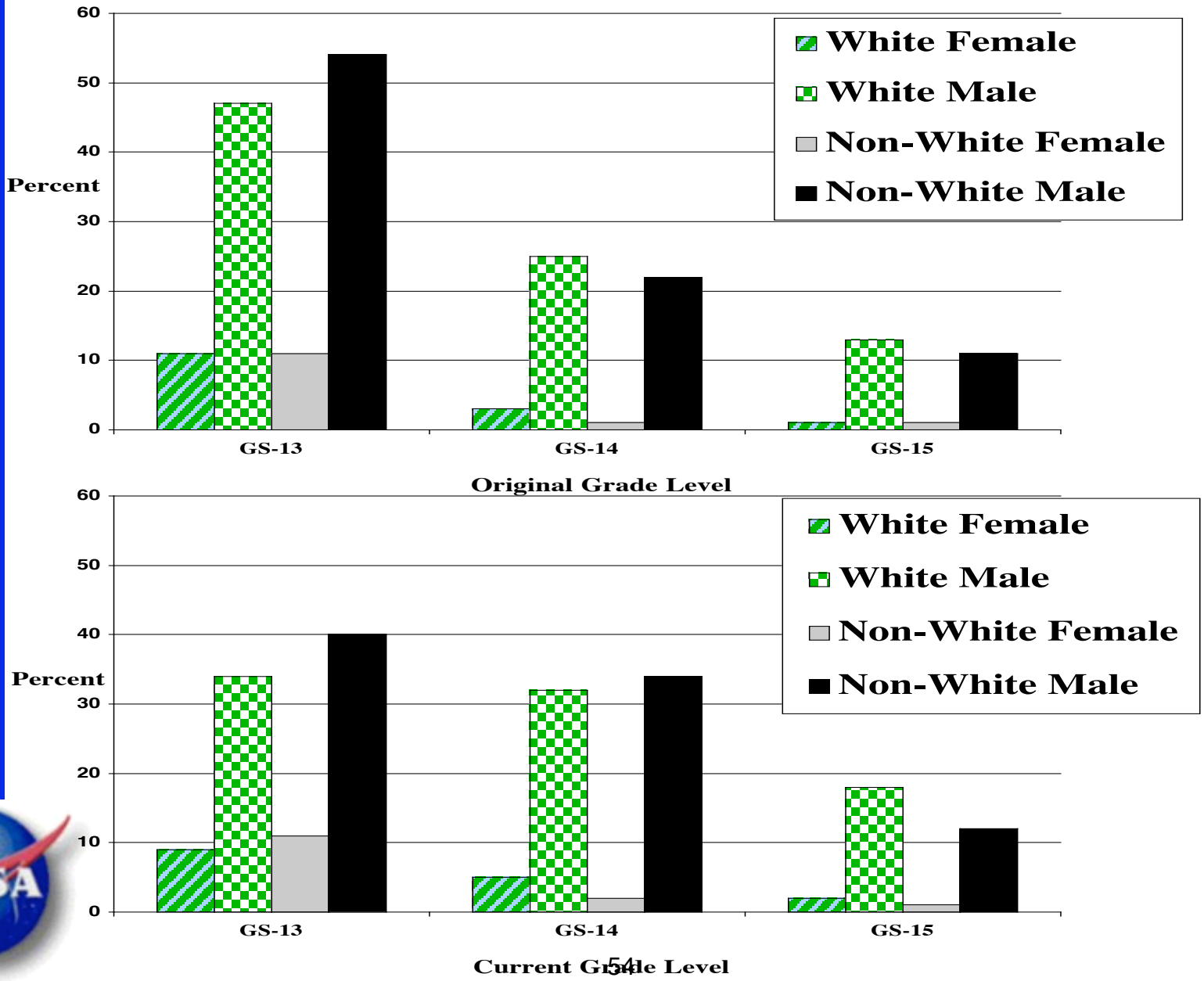
Significant Survey Response Differences for Role



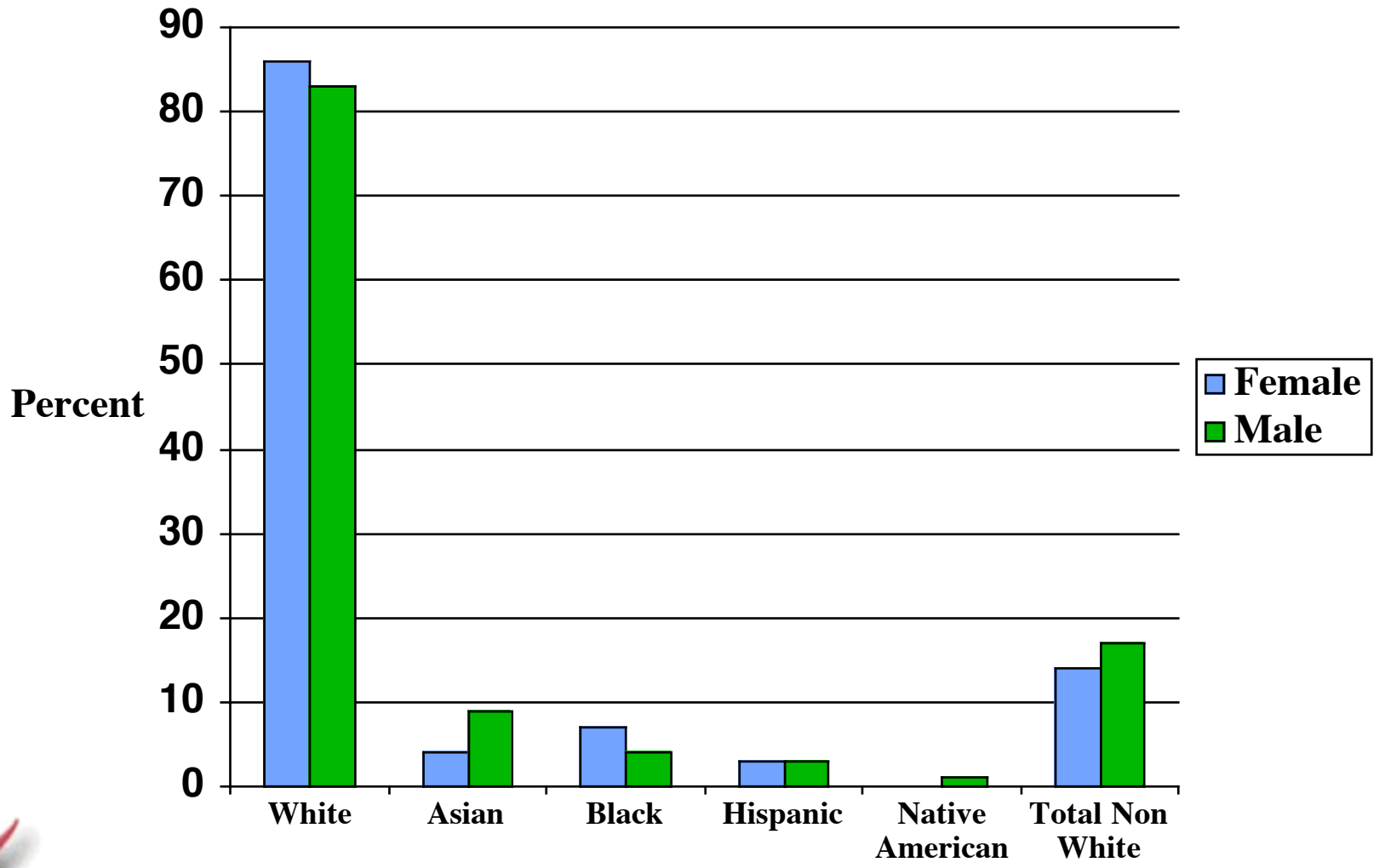
Significant Survey Response Differences for Reviewees



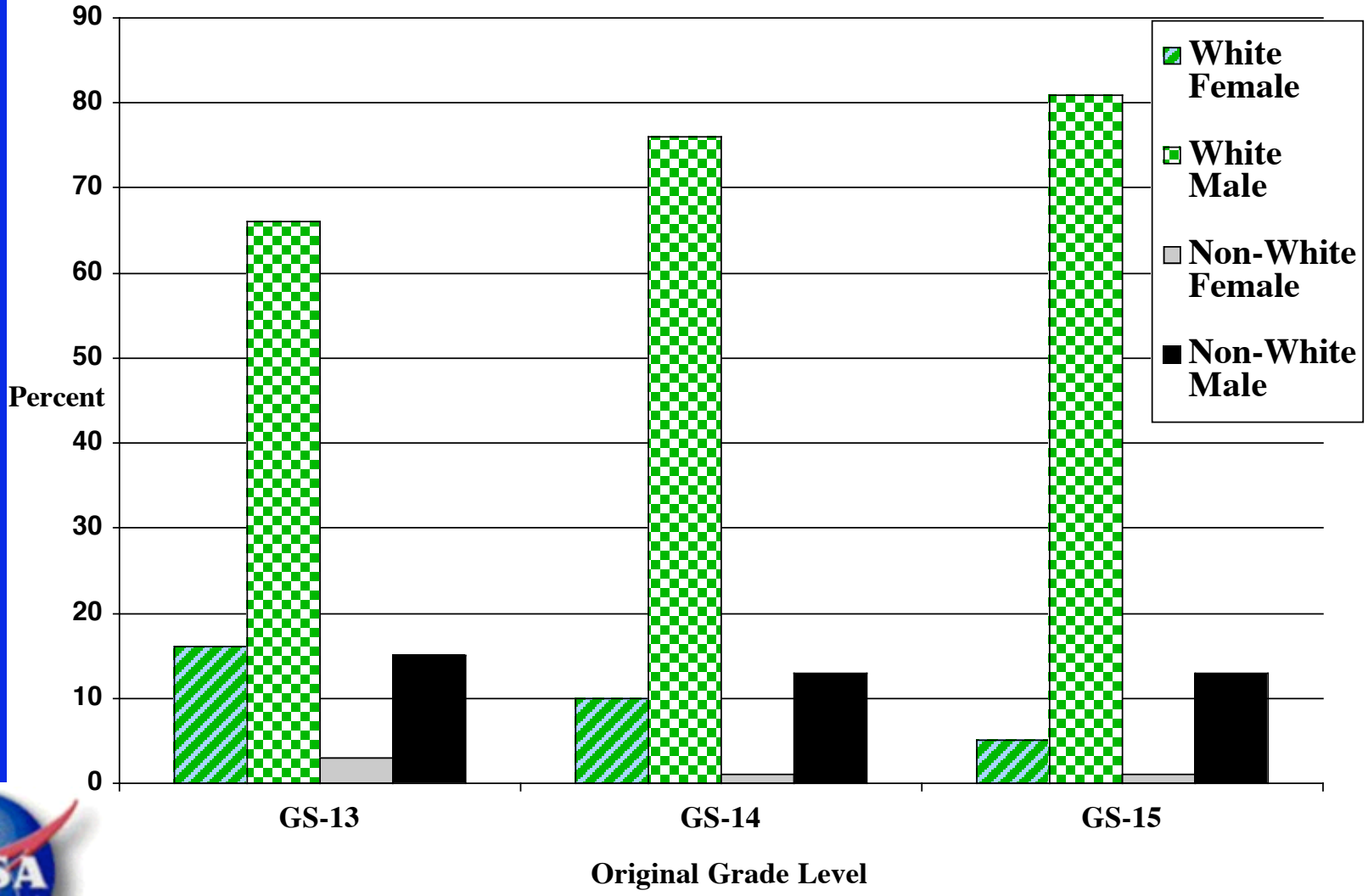
RDCP Population Distribution of Gender within Race of Original and Current Grade Level



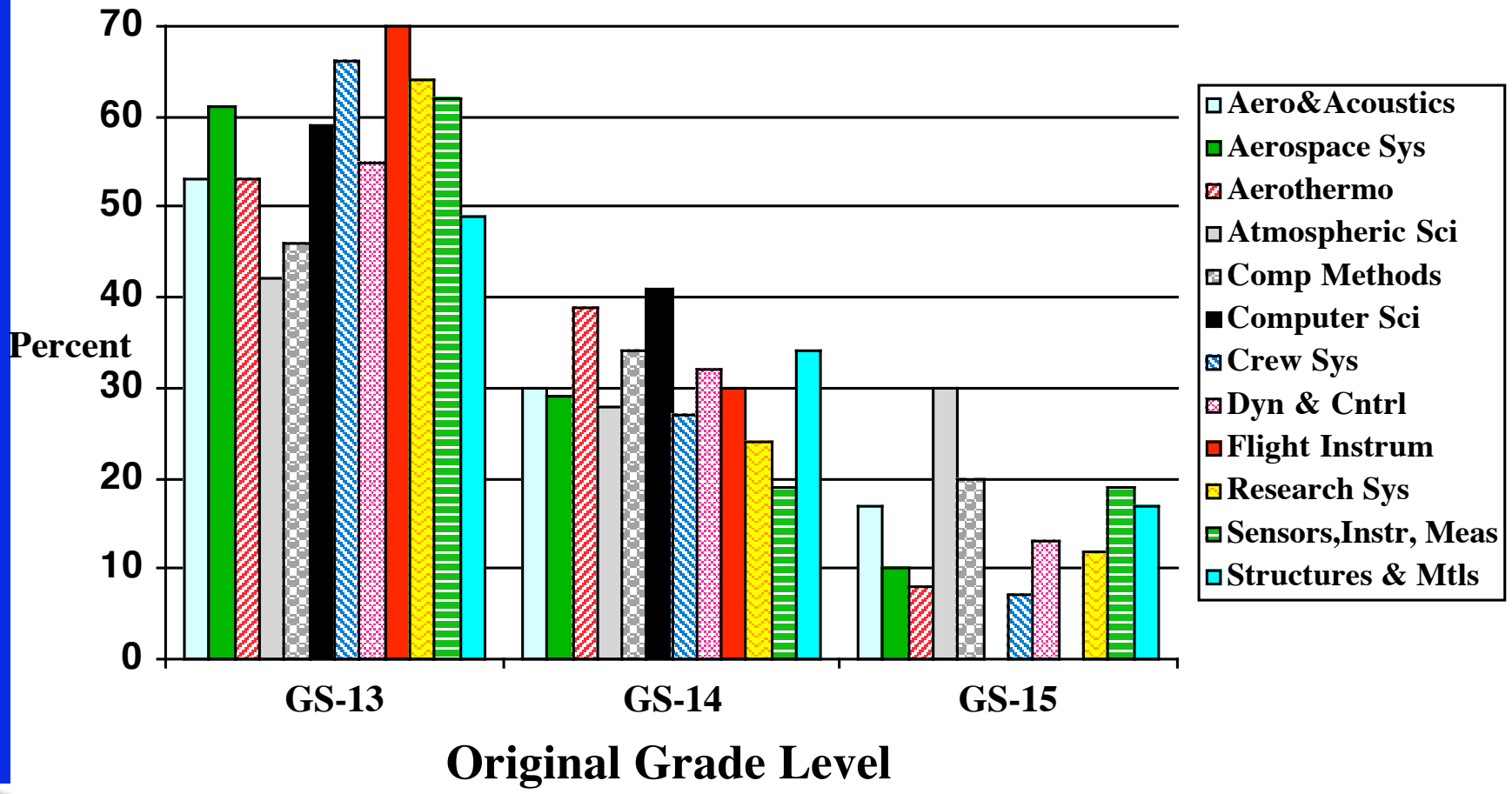
Distribution of RDCP Participants by Race and Gender



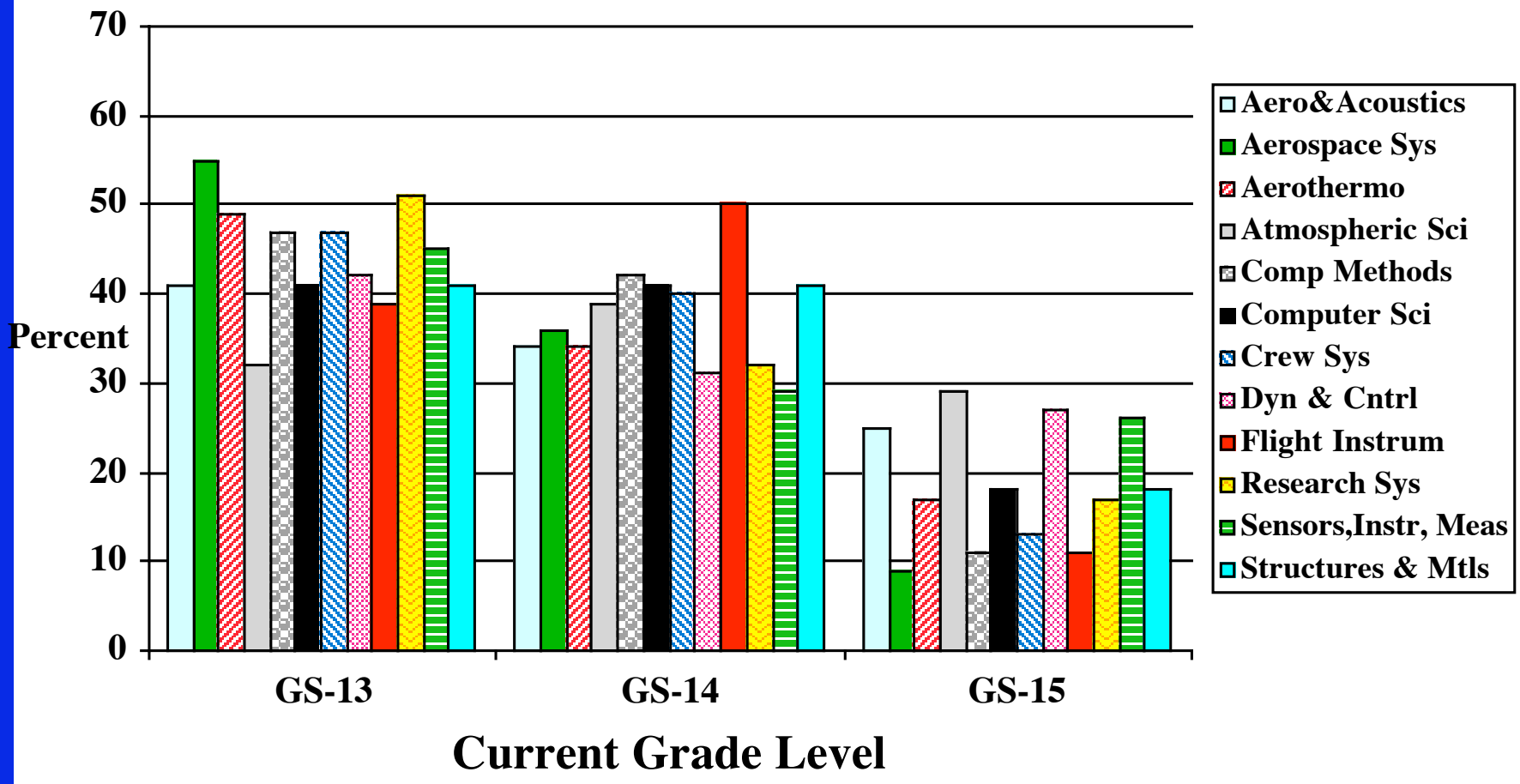
Distribution of race and gender within Original Grade Level



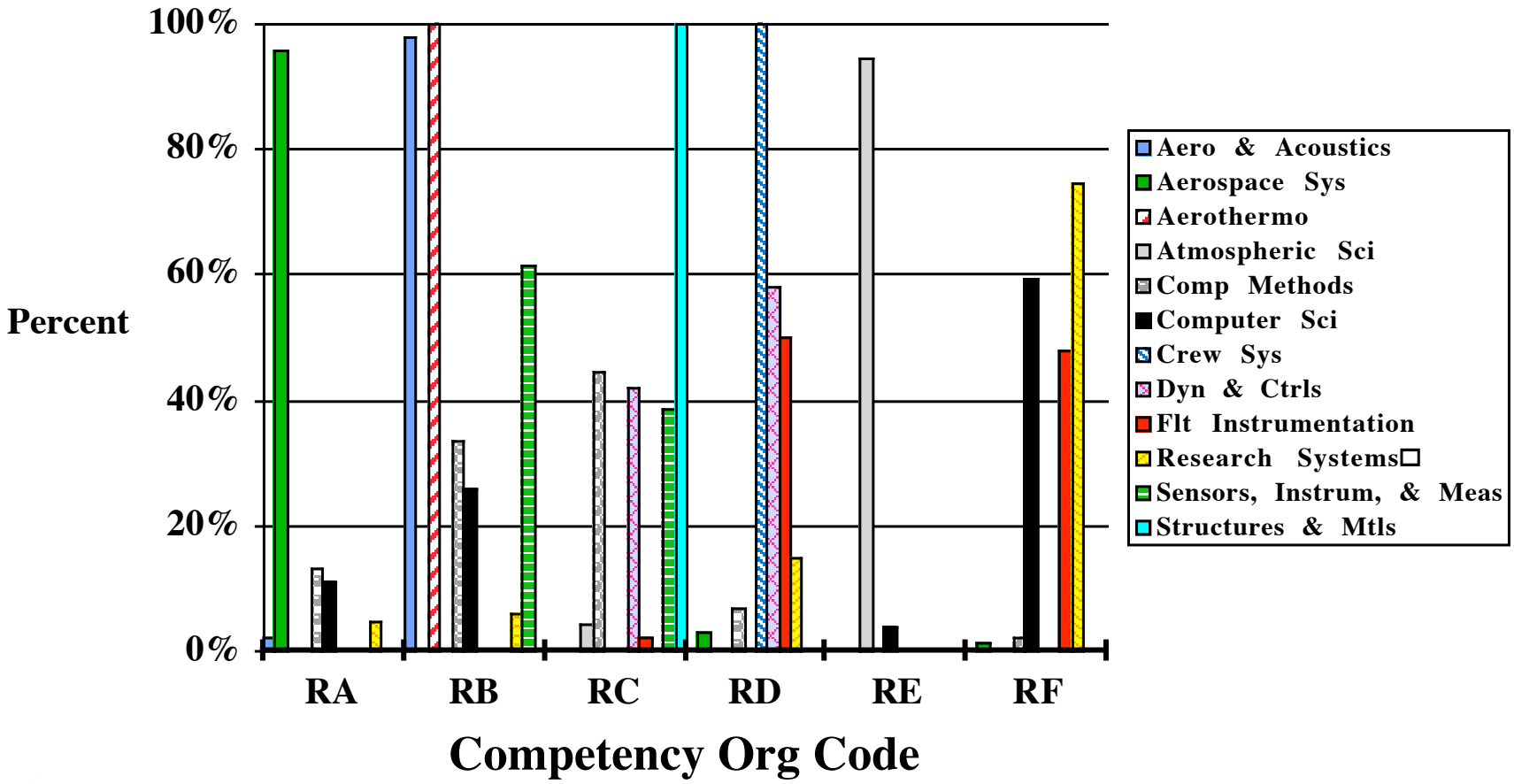
Initial Distribution by Grade Level for Peer Group



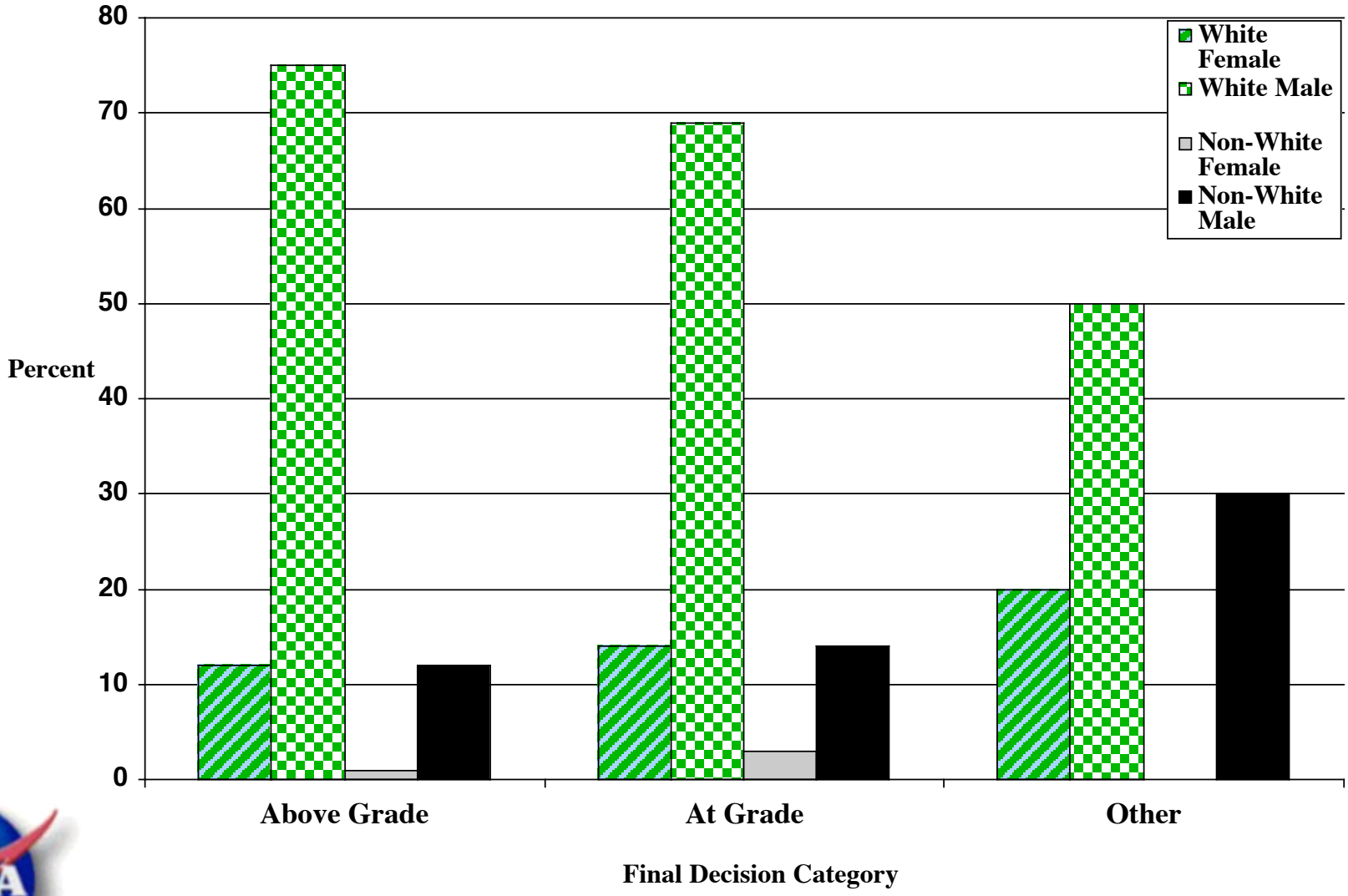
Final Distribution by Grade Level for Peer Group



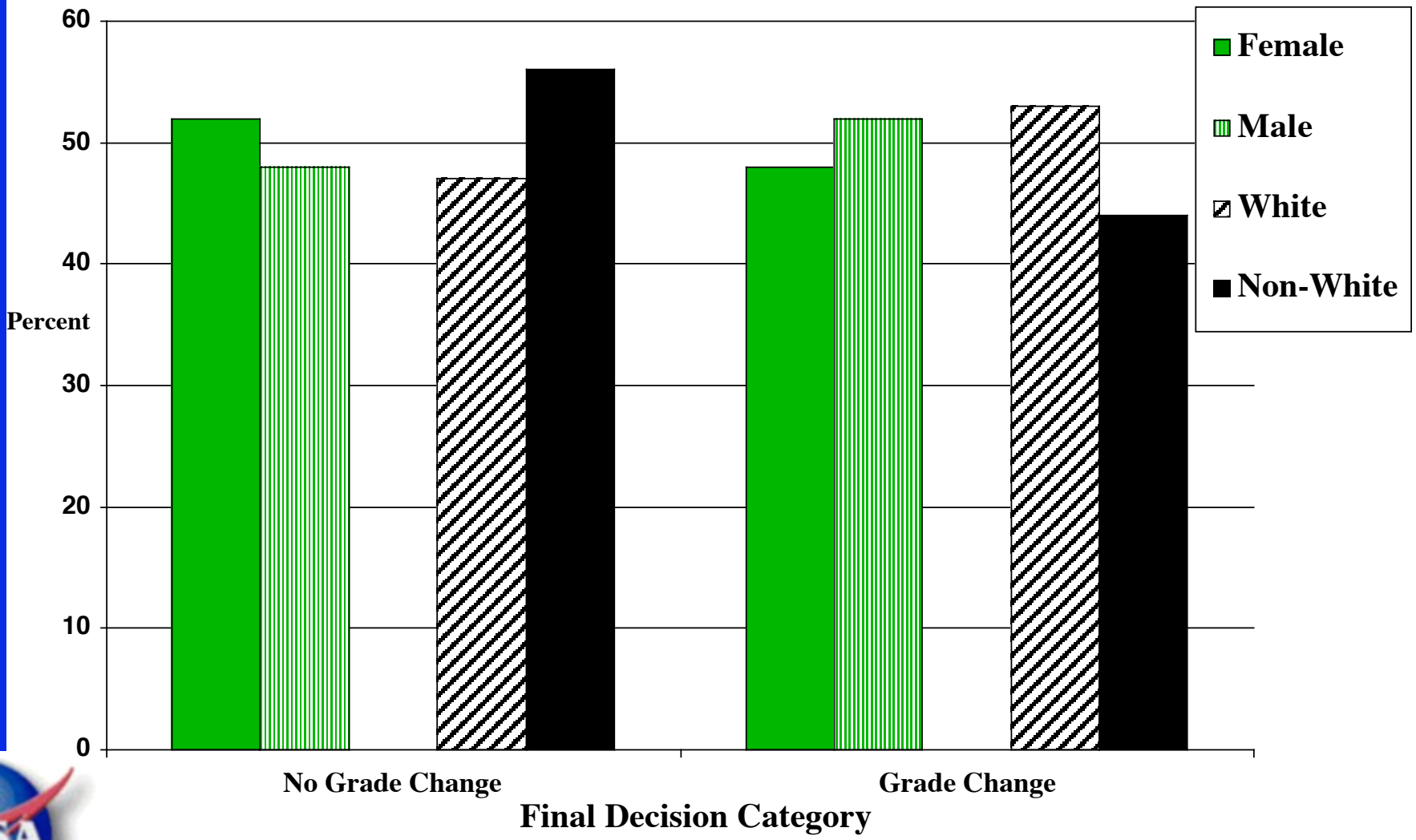
Distribution of Reviewees by Peer Group for Each Competency



Distribution of race and gender within Final Decision Category



Comparison of Grade Change for gender and race for Reviewees



Session 7 Results

- 73 Reviewed
  - 36 above grades
    - » 2 borderline above another grade
  - 31 at grades
    - » 1 GS-15 ST Pool Referral
    - » 7 borderline above next grade
    - » 1 borderline below grade
  - 1 below grade
  - 3 Guide Not Applicable
  - 2 Insufficient information